

REMARKS

Claims 12-42 were pending when last examined. With this amendment, Applicants cancel Claims 23-28 and 34-37 without prejudice or disclaimer. All pending claims are shown in the detailed listing above.

Claim Rejections – 35 USC § 112

Claims 12-22 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. According to the Examiner, “The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added material in claims 12 and 19 are ‘A circuit for automatically assigning the charge pumping system to function in the forward operation mode or the reverse operation mode based at least in part on the input voltage.’” Applicants respectfully traverse.

The specification as filed contains support for the claimed “circuit for automatically assigning the charge pumping system to function in the forward operation mode or the reverse operation mode based at least in part on the input voltage.” In particular, Figure 4 and paragraphs [0037] through [0041] at pages 10 and 11 of the specification describe an exemplary implementation for such a circuit. For example, as stated in paragraph [0038], “FIG. 4 is a schematic diagram of a circuit 40 for assigning whether the MID and TOP nodes of system 10 have been connected for forward operation mode or reverse operation mode, according to an embodiment of the present invention.”

Accordingly, the rejection of Claims 12-22 under 35 U.S.C. § 112, first paragraph, cannot stand.

Double Patenting

Claims 12-22, 24-28 and 30-37 stand rejected under 35 U.S.C. § 101 as claiming the same invention as that of claims 1-11 of prior U.S. Patent No. 6,657,875. According to the Examiner, “This is a double patenting rejection.”

Claims 24-28 and 34-37 have been cancelled, thereby rendering moot any rejection of these claims.

As to the remaining claims, each of Claims 12-22 and 30-33 of the present Application are not coextensive in scope with Claims 1-11 of US Pat. No. 6,657,875. In particular, these claims of the present Application contain limitations which are not found in the claims of US Pat. No. 6,657,875.

For example, Claims 12 and 19 each recite, *inter alia*, “a circuit for automatically assigning the charge pumping system to function in the forward operation mode or the reverse operation mode based at least in part on the input voltage.” As discussed above, this limitation is fully supported by the specification as filed, and thus, cannot be ignored. Nowhere is such a limitation found in Claims 1-11 of US Pat. No. 6,657,875. Claims 13-18 and 20-22 depend from Claims 12 and 19, and thus, include the same limitation. As such, Claims 12-22 do not claim the same invention as that of Claims 1-11 of US Pat. No. 6,657,875.

Similarly, Claim 29 of the present Application, from which Claims 30-33 depend, recites, *inter alia*, “a circuit for automatically assigning the system to function in the step-up/step-down operation or the step-down/step-up operation based on the respective voltage potentials at the various terminals.” By dependency, Claims 30-33 include the same limitation. Again, nowhere is such a limitation found in Claims 1-11 of US Pat. No. 6,657,875. As such, Claims 30-33 do not claim the same invention as that of Claims 1-11 of US Pat. No. 6,657,875.

For at the reasons given above, the rejection of Claims 12-22 and 30-33 under 35 U.S.C. § 101 as claiming the same invention as that of prior U.S. Patent No. 6,657,875 must be withdrawn.

Claim Rejections – 35 USC § 102

Claims 23, 29 and 38-42 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nork (5,973,944). Applicants respectfully traverse.

Claim 23 has been cancelled, thereby rendering moot any rejection of this claim.

Claim 29 recites, *inter alia*, “A charge pumping system operable to be connected among a plurality of terminals for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation, the system comprising...a circuit for automatically assigning the system to function in the step-up/step-down operation or the step-down/step-up operation based on the respective voltage potentials at the various terminals.” Nowhere are such limitations found in Nork.

Nork discloses a DC-DC converter 200 that is capable of performing step-up conversion in one mode of operation and step-down conversion in another mode of operation. See Nork, col. 6, lns. 27-65. At most, this feature of Nork would be *either* “functioning in a step-up/step-down operation” *or* “functioning in a step-down/step-up operation” as recited in Claim 29. It cannot be both.

In contrast, Applicants’ claimed invention provides for *both* “functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation.” This is because in the DC-DC converter 200 of Nork, the step-up and step-down conversion always occurs from node V_{in} to node V_{out} , which is essentially a one-way operation. The DC-DC converter 200 of Nork is

not able to perform step-up and step-down conversion in the opposite direction using the same terminals—i.e., from node V_{out} to node V_{in} .

In the Examiner’s “Response to Arguments,” the Examiner asserts, “With respect to claims 23, 29 and 38-42, Applicant’s argues that Nork does not use its input node as output node or vice versa. Applicant’s does not have such limitation in the claims.” But the Examiner misses the point. The fact that the converter 200 of Nork is incapable of using its input node as an output node, or vice versa, is not what distinguishes Applicants’ claimed invention from Nork. Instead, it is that Applicants’ invention *as recited in Claim 29* provides for both “functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation.” Nork does not disclose, teach, or suggest such *claimed* limitations, and accordingly, cannot anticipate Applicants’ Claims 29.

For at least the reasons discussed above, Applicants respectfully request that the rejection of Claim 29 under 35 U.S.C. § 102(b) be withdrawn and this claim be allowed.

Applicants’ Claim 38 recites, “A fractional switch for connection between a first node and a second node, the fractional switch comprising a plurality of segments connectable in parallel between the first and second nodes, each segment operable to be individually turned on and off, wherein the number of segments which are turned on at a given moment is varied depending on loading conditions between the first and second nodes.” This is not disclosed or taught by Nork.

Nork does not disclose any “fractional switch,” much less, one “for connection between a first node and a second node, the fractional switch comprising a plurality of segments connectable in parallel between the first and second nodes, each segment operable to be individually turned on and off, wherein the number of segments which are turned on at a given moment is varied depending on loading conditions between the first and second nodes,” as recited in Claim 38. As such, Nork does not anticipate Applicants’ Claim 38.

In the Examiner's "Response to Arguments," the Examiner altogether fails to address the limitations of Claim 38 directed to a fractional switch, its connections, and its make-up.

For at least the reasons discussed above, the rejection of Claim 38 under 35 U.S.C. § 102(b) should be withdrawn and this claim be allowed. Furthermore, because each of Claims 39-41 depend from Claim 38 and include further limitations, Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) also be withdrawn and the claims be allowed.

Applicants' Claim 42 recites, "A fractional switch for adjusting the flow of current between a first node and a second node, the fractional switch comprising: a first transistor connected between the first and second nodes, the first transistor having a first size; a second transistor connected between the first and second nodes, the second transistor having a second size which is larger than the first size; and a third transistor connected between the first and second nodes, the third transistor having a third size which is larger than the second size; wherein the first, second, and third transistors are operable to be individually turned on and off depending on loading conditions between the first and second nodes." As discussed above, Nork does not disclose any fractional switch whatsoever. Accordingly, Nork does not anticipate Applicants' Claim 42.

Again, in the Examiner's "Response to Arguments," the Examiner altogether fails to address the limitations of Claim 42 directed to a fractional switch, its connections, and its make-up.

For at least the reasons discussed above, Applicants respectfully request that the rejection of Claim 42 under 35 U.S.C. § 102(b) be withdrawn and this claim be allowed.

CONCLUSION

Applicants respectfully request that the pending claims be allowed and the case passed to issue. Should the Examiner wish to discuss the Application, it is requested that the Examiner contact the undersigned at (415) 772-1200.

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